

Work Order ID 96735

May-29-13 9:01:04 AM

Duplicate

96735

Page 1

Item ID: D212-664-107

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Low Standard Fwd

Start Date: 1/31/13 Start Qty: 1.00

1

Cust Item ID:

Required Date: 2/14/13 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MUS

Date: 13-05-29

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D212-664-147

Rev B (DEO)

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D212-664-107
D6019-128 (ID = 2.125") = CHG 002

27

13 6 19

1 of 1 MUS 13-6-18

110

0.00

110

Packaging

Packaging

Memo

0.00

Packaging

JW 13-05-29

120

0.00

120

BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D212-664-107 using CNC bender program 212-107

JW 13-05-29

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Item ID: D212-664-107

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Low Standard Fwd

Start Date: 1/31/13 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 2/14/13 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC15- Crosstube Dimensional Check	0.00							
130									
QC	Memo	0.00							
Quality Control									

DAS
16
13/06/13

For Deakent 10/17

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Item ID: D212-664-107

Accept

N900040100

Setup Start ***NS1***

Revision ID:

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Item Name: Crosstube Low Standard Fwd

Start Date: 1/31/13 Start Qty: 1.00

1

Cust Item ID:

Required Date: 2/14/13 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140

0.00

140

Crosstubes

Crosstubes

Memo

0.00

***** ENSURE PROPER JIG POSITIONING *****

1-Cut tube as per inspection dwg and deburr ends. ***ensure saw is square***

2-Position cuffs on tube ensure proper positioning

3-Drill tube as per dwg using DT8577 location #7 & # 212 ULF using jig DT8548 and DT8549 as per QSI 10

4-Transfer drill rivet holes from cuff into tube.

5-Identify cuff position and Batch # on each and identify tube as per dwg D212-664-107.

6- *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***
Inspect surface damage

7- Deburr and realodine cuff.

Rn/mw 13-05-22

13-06-03

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Item ID: D212-664-107

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Setup Start ***NS1***

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 *150* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	0.00 0.00		5MB BGS		1			
160 *160* HandFXtube Hand Finishing Crosstubes	Memo *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 1- CLEAN CROSSTUBE WITH WASH'N WIPE	0.00 0.00				1	0	0	13-6-4
180 *180* Outsource2 Outsource process - NDT	Outsource process - NDT per QSI038 4.1 Memo *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O 20087 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	0.00 0.00							CY 13/06/04 ①

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Item ID: D212-664-107

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Required Date: 2/14/13 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start *NR1*

QC: Date: SPC (Y/N): Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
205 *205* QC Quality Control	QC7-Inspect Chemical Conversion Coat Memo *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	0.00 0.00	DAS 27 13 G-S			1			
210 *210* Crosstubes Crosstubes	Crosstubes Memo *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 1-Rivet Cuffs as per Dwg D212-664-147. with Sika flex in Between tube & Cuff A/R SIKAFLEX -241/-291 BATCH: 120473	0.00 0.00				1	0	0	13-6-8
215 *215* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	0.00 0.00	DAS 16 13/04/10						

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Item ID: D212-664-107

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Cust Item ID:

Required Date: 2/14/13 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220

0.00

220

SprayPaint

SprayPaint

Memo

0.00

Spray Painting

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME: **124403**

Start Time: **3:00**

Finish Time: **3:30**

PAINT: **125226**

Start Time: **12:30**

Finish Time: **1:15**

1 0 0 **13-6-12**

230

QC14- Inspect Spray Paint

0.00

230

QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

1 **DAS 05 13-6-13**

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Cust Item ID:

Required Date: 2/14/13 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

240	Crosstubes	0.00				1	0	0	AP
-----	------------	------	--	--	--	---	---	---	----

240

Crosstubes

Crosstubes

Crosstubes

Memo

0.00

1- Assemble as per Dwg D212-664-147

1-Abrade mating surfaces of support and crosstube with 400 grit sandpaper,
clean the area with 4105S wash 'n' wipe

2-Install supports with Proseal 890 per DSI9563 and QSI 015
A/R Proseal 890 Batch: 124856

3- Torque bolts as per dwg

250	QC5- Inspect part completeness to step on W/O	0.00				1			DAS
-----	---	------	--	--	--	---	--	--	-----

250

QC

Quality Control

Memo

0.00

13-06-15

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Item ID: D212-664-107

Accept

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Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Low Standard Fwd

Start Date: 1/31/13 Start Qty: 1.00

1

Cust Item ID:

Required Date: 2/14/13 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
255	Pick Kit	0.00							
255									
Packaging	Memo	0.00							
Packaging									
260	QC4- 100% Inspect kits for completeness	0.00							
260									
QC	Memo	0.00							
Quality Control									
270	Packaging	0.00							
270									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D212-664-107								

13/6/19

11.10. 13-06-18

13/6/19

13 6 19

13/6/21

13/6/21

6

8

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N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Low Standard Fwd

Start Date: 1/31/13 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 2/14/13 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

13/6/2598

pl/3-06-24

Picklist Print

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4

Work Order ID: 96735

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Parent Item: D212-664-107

D212-664-107

Parent Item Name: Crosstube Low Standard Fwd

Start Date: 1/31/13

Required Date: 2/14/13

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 07.09.12 EC verified by: JLM
 IPP Rev:B ECN 1100 08-01-11 DD verified by: EC
 IPP Rev:C Ecn 1121 08-02-25 DD Verified by:ec IPP Rev:D
 10.05.27 added pick kit DD verf:EC IPP Rev:E 11.10.17
 added SEQ 215 DD verf:EC IPP REV:F 11.11.03 as per
 chg003 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D212-664-107TRN		Manufactured	No			140	Each	4.0000	1	1			
D212-664-107TRN									**				
Crosstube Turning Detail													

B95452

TW 13-05-29

Location	Loc Qty	Loc Code
LG	1	
95451	1	
LG014	3	
94880	1	
94881	1	
95452	1	

D3659-1 Manufactured No

220 Each 4.0000 2 2

D3659-1

CUFF

**

B94160

Location	Loc Qty	Loc Code
ST482	4	
97181	4	

TW 13-05-29

CR3212-4-06 Purchased No

240 Each 181.0000 44 44

CR3212-4-06

CHERRY RIVET

**

125955
123785

Location	Loc Qty	Loc Code
ST328	181	
122141	180	
123301	1	

13-6-6

Picklist Print

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Work Order ID: 96735

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Parent Item: D212-664-107

D212-664-107

Parent Item Name: Crosstube Low Standard Fwd

Start Date: 1/31/13

Required Date: 2/14/13

Start Qty: 1.00

Required Qty: 1.00

D3595-063-450

Manufactured No

240

Each

73.7000

4

4

D3595-063-450

RUBBER CUSHION

**

AP 13-6-13

Location

Loc Qty

Loc Code

FG

15

88422

5

94274

10

LG051

5.7

99357

5.7

ST414

53

100430

48

100705

5

(4)

MS21920-25

Purchased

No

240

Each

69.0000

4

4

MS21920-25

Clamp(per MIL-DTL-8783C)

**

AP 13-6-13

Location

Loc Qty

Loc Code

FG

2

120920

2

LG

38

m125727

38

LG050

26

116264

2

117998

4

118142

4

119339

2

119746

2

120475

3

120920

7

123930

2

LG051

3

122838

3

(4)

Picklist Print

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Parent Item: D212-664-107

Parent Item Name: Crosstube Low Standard Fwd

96735

D212-664-107

Start Date: 1/31/13

Required Date: 2/14/13

Start Qty: 1.00

Required Qty: 1.00

D2893-1

Manufactured No

240

Each

29.0000

2

2

D2893-1

2.75 Support

**

AS 13-6-13

Location

Loc Qty

Loc Code

FG

2

87289

2

LG052

27

100853

12

72865

2

92823

1

96489

12

D3428-1

Manufactured No

260

Each

30.0000

**

M.D. 13-06-18

D3428-1

Placard

SKP

Location

Loc Qty

Loc Code

ST045

30

100704

30

AN6-35A

Purchased No

260

Each

52.0000

**

M.D.

AN6-35A

BOLT

SKP

Location

Loc Qty

Loc Code

ST340

2

124392

2

ST517

50

125388

50

4X

Picklist Print

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Work Order ID: 96735

Parent Item: D212-664-107

Parent Item Name: Crosstube Low Standard Fwd

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D212-664-107

Start Date: 1/31/13

Required Date: 2/14/13

Start Qty: 1.00

Required Qty: 1.00

AN6-36A Purchased No

260 Each

56.0000

4 4

AN6-36A

Bolt

**

M.H. 13-06-18

Location

Loc Qty

Loc Code

ST340

6

118422

2

124392

4

ST517

50

125388

50

4x

MS21042L6 Purchased No

260 Each

461.0000

6 6

MS21042L6

Nut

**

M.H.

Location

Loc Qty

Loc Code

ST314

461

123248

9

125535

452

6x

AN960JD6L6 NAS1149D0663J Purchased No

260 Each

0.0000

18 18

AN960JD6L6

Washer

**

125709

M.H.

Item	Qty -147	Qty -147B	Part Number	Description
1	X		D212-664-147	CROSSTUBE ASSEMBLY (205/212/412 LOW FWD)
2		X	D212-664-147B	CROSSTUBE ASSEMBLY (214 LOW FWD)
3	1	1	D6019-128	CROSSTUBE
4	2	2	D2893-1	SUPPORT
5	4	4	D3595-063-450	RUBBER CUSHION
6	2	2	D3659-1	CUFF
7	4	4	MS21920-25	CLAMP (OR MS21920-26)
8	44	44	CR3212-4-06	RIVET (OR M7885/3-4-06)
9	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
10	A/R	A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6019-128
FINISHED LENGTH = 126.528±0.020 (BEFORE BENDING/TRIMMING)
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF
USING VIBRATING STYLUS.
- WEIGHT: D212-664-147 = 24.2 lbs (PER IIN-D212-664)
D212-664-147B = 24.2 lbs (PER IIN-D212-664)
- PART IS SYMMETRIC ABOUT CENTERLINE.
- WHEN MACHINING TAPER, RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD
BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6%
BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2893-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF
D2893-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER
INSTALLATION AND PRIOR TO PACKAGING.
- INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2893-1
SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE
SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS.
DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE
UNACCEPTABLE.
- TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS
NOT BOTTOMED-OUT AFTER TORQUING.
- INSTALL D3659-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF
SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE.
SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

UNCOL
SUB

NO. 9.6735 MJS
13-05-29

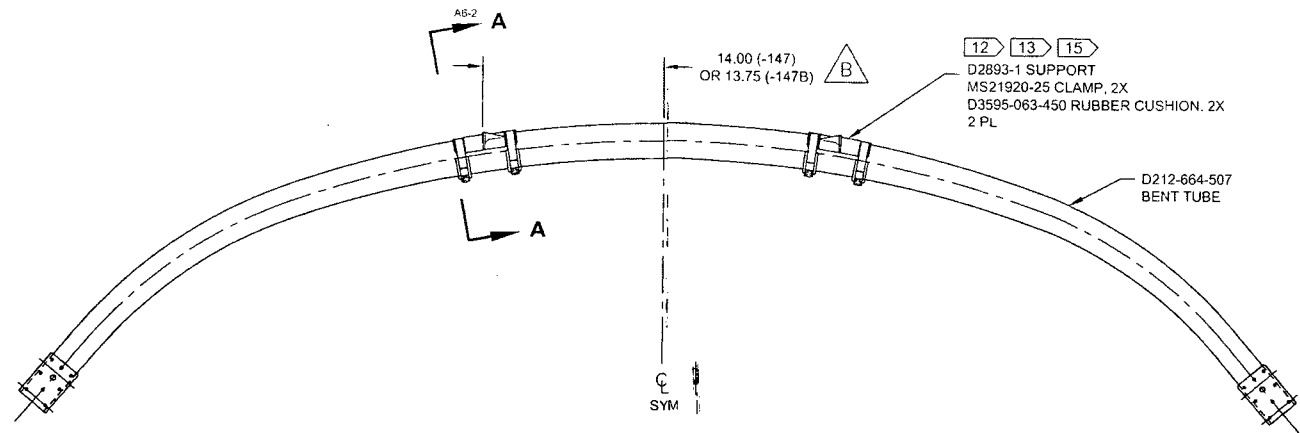
DEO ATTACHED

Per ECN #1164
11.07.20
UNDER REVIEW
9/11/20.13

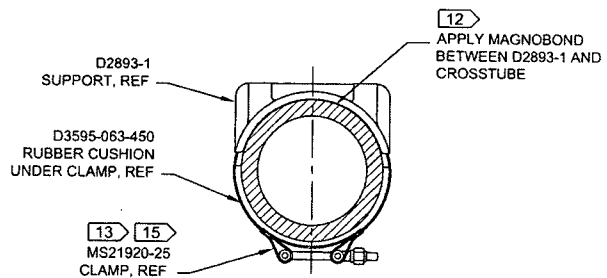
RELEASED
2009-10-29

B	REVISE GENERAL NOTES/PART LIST; UPDATE TO CURRENT STANDARDS: ADD -147B (ZN C4-2, D4-2)	RF	09.09.30
A	NEW ISSUE	CP	07.07.07
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. B
CHECKED	RF	D212-664-147	SHEET 1 OF 4
MFG. APPR.	RF	TITLE	SCALE
APPROVED	RF	CROSSTUBE (205/212/412 LOW FWD)	NTS
DE APPR.	RF	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	09.09.30		

96735



D212-664-147I-147B
ASSEMBLY DETAIL B



SECTION A-A D5-2
SCALE 4X

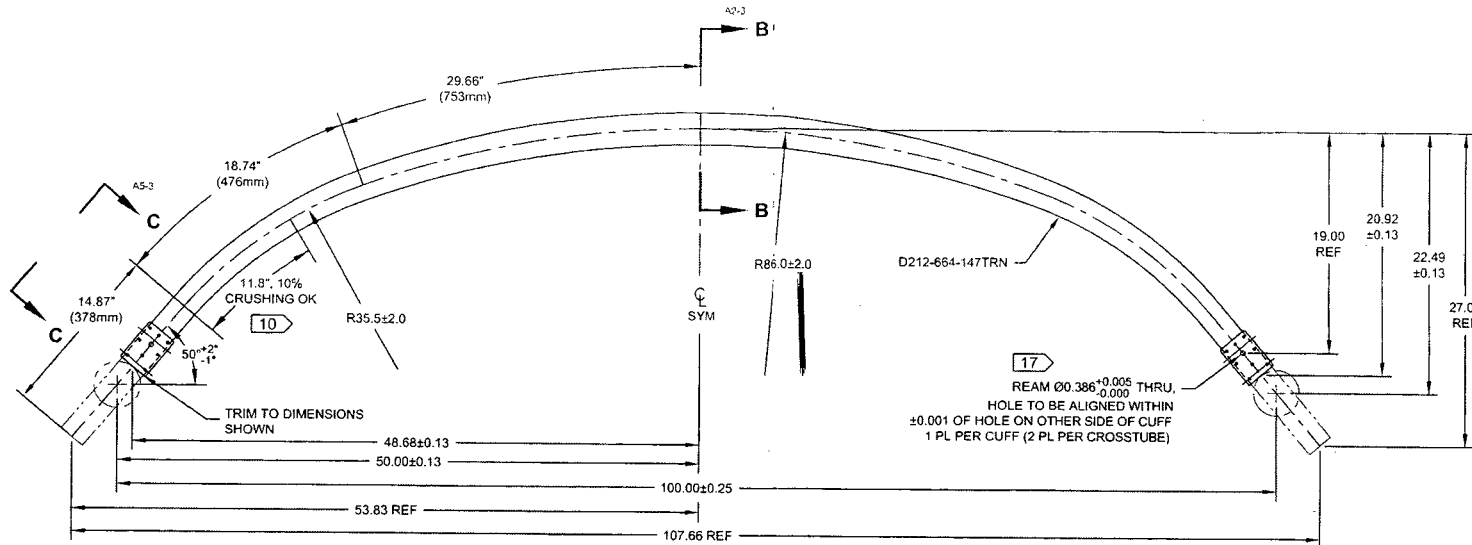
DEO ATTACHED

ECU #11-614
EX. 09.20
UNDER REVIEW
09.11.06.13

RELEASED
2009-10-29
WAD

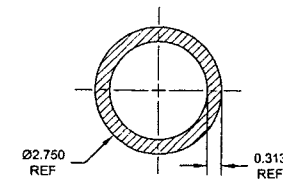
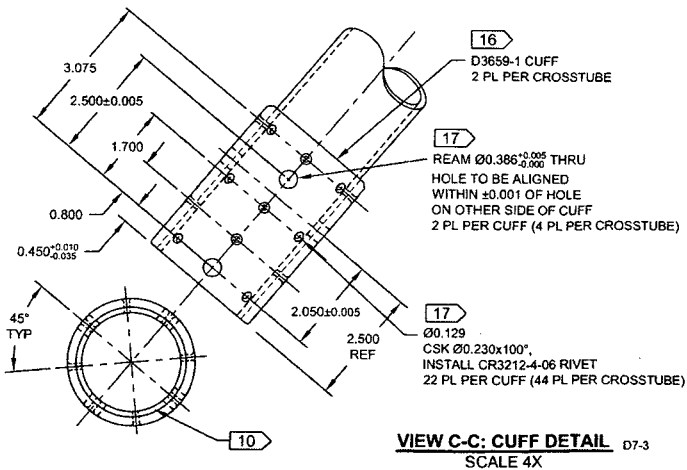
DESIGN	90	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	90	DRAWING NO.	REV. B
MFG. APPR.	18	D212-664-147	SHEET 2 OF 4
APPROVED	18	TITLE	SCALE
DE APPR.	18	CROSSTUBE (205/212/412 LOW FWD)	NTS
DATE	09.09.30	<small>COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

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D212-664-507
BENDING AND DRILLING DETAIL

10 B

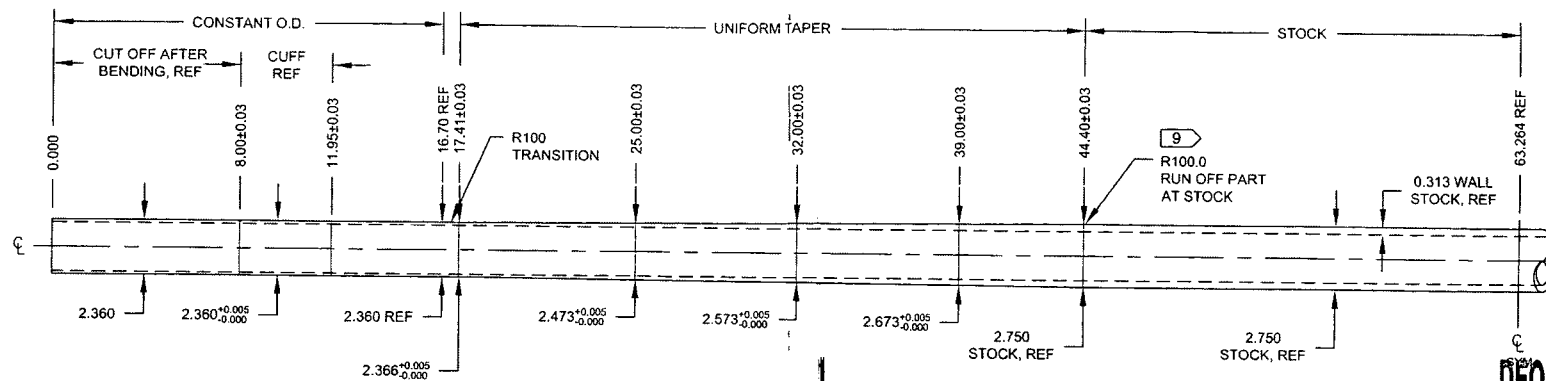


620411-614
24.07.20
UNDER REVIEW
4/10/13

RELEASED
2009-10-29

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	9	DRAWING NO.	REV. B
MFG. APPR.	18	D212-664-147	SHEET 3 OF 4
APPROVED	19	TITLE	SCALE
DE APPR.	19	CROSSTUBE (205/212/412 LOW FWD)	NTS
DATE	09.09.30	COPYRIGHT © 2007 BY DART AEROSPACE LTD	
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96736



**D212-664-147TRN
TURNING DETAIL**

660 #1-614
11.07.26
UNDER REVIEW
11/05/13

RELEASED
2009-10-29

DESIGN	9P	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	9P	DRAWING NO.	REV. B
MFG. APPR.	DS	D212-664-147	SHEET 4 OF 4
APPROVED	9P	TITLE	SCALE
DE APPR.	11	CROSSTUBE (205/212/412 LOW FWD)	NTS
DATE	09.09.30	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

96735

DRAWING NO. D212-664-147	TITLE CROSSTUBE ASS'Y (205 LOW FWD)	REV. B	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D212-664-147-B-1	SHEET NO. SHEET 1 OF 1	SCALE N/T'S
DRAWN 47	CHECKED ASS	MFG. APPR. 18	APPROVED W.P.		DE APPR. H		
DATE 11.07.15	DATE 11.07.20	DATE 11.07.21	DATE 11/07/21		DATE 11.07.21		

PURPOSE:

REPLACE MAGNOBOND WITH PROSEAL.

CHANGE:

IS:

Item	Qty -147	Qty -147B	Part Number	Description
9	A/R	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

WAS:

9	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
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NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) TO INSTALL D2893-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN.-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

WAS:

- 12) INSTALL D2893-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2893-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN.-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
2011-07-28
W.P.



LIQUID PENETRANT TEST REPORT

P- 15339

CLIENT DART Aerospace DATE June 4/13 PAGE 1 OF 1
ATTENTION ANDY SHELTON ACUREN JOB No. 188-13-CHP TIME AM ☒ PM ☐
ADDRESS 1270 ABE DEEN POWO No. -
HAWKESBURY, ON WORK LOCATION Same - Hawkeshbury, ON
PROJECT F.P.I. on cross tubes and studs ACCEPTANCE STD. ASTM 1417/038 REV./DATE 2008
ITEM(S) EXAMINED CROSS TUBES = NUTTED STUDS = (12)

JOB DESCRIPTION PROCEDURE No. LT-~~1000~~ REV./DATE 2008 TECHNIQUE No. LT-~~1000~~ REV./DATE 2008
PART No. SEE RESULTS MATERIAL STAINLESS STEEL / 304 THICKNESS VARIOUS
SCOPE A DYE FLUORESCENT DYE INSPECTION WAS COMPLETED ON THE
100% OF THE SURFACE ONLY

TEST DETAILS

METHOD <input checked="" type="checkbox"/> FLUORESCENT <input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH <input type="checkbox"/> SOLVENT REMOVABLE <input type="checkbox"/> POST EMULSIFIER
FAMILY BRAND <u>MAFLUX</u>	BLACK LIGHT S/N <u>16459</u> <input checked="" type="checkbox"/> OUTPUT > 1000 μ W/cm ² <input type="checkbox"/> AMBIENT < 2 fc
PENETRANT <u>2CG7</u> MINIMUM DWELL TIME <u>450</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER <u>W20</u> MINIMUM DRY TIME <u>>10</u> MIN.	OTHER <u>LABINO</u>
DEVELOPER <u>SKD52</u> MINIMUM DWELL TIME <u>10</u> MIN.	LIGHT METER S/N <u>-</u> CAL DUE DATE <u>-</u>
DEVELOPER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY	

TEST SURFACE

SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☒ CLEAN BARE METAL
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- ☒ METRIC ☐ IMPERIAL

ITEM	DESCRIPTION	REMARKS	STATUS
12	STUDS - W.O.# 101630		✓
	CROSS TUBES - W.O.#		
1	16734	RESPONSE 1	✓
1	16735	TIME OK	✓
2	95008		✓
1	95042		✓
1	95049		X
1	95005		✓
1	95046		✓
1	95040		X
1	95866		✓
1	95867		✓

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE <u>Andy Sheldon</u> PRINT <u>ASheldon</u> SIGNATURE	DTR # <u>E-03773</u>
TECHNICIAN (SIGNATURE): <u>M. No. 14456</u> PRINT <u>M. No. 14456</u> SIGNATURE	REPORT REVIEWED BY: <u>-</u> NAME <u>-</u> INITIALS <u>-</u>
NAME (PRINT): <u>M. No. 14456</u> 1 ST TECHNICIAN	NAME <u>-</u> INITIALS <u>-</u>
CGSB LEVEL <u>-</u> SNT LEVEL <u>-</u> CGSB REG. No. <u>06016</u>	2 ND TECHNICIAN
CGSB LEVEL <u>-</u> SNT LEVEL <u>-</u> CGSB REG. No. <u>-</u>	